

## REMARKS

Reconsideration of this application and entry of this Amendment is respectfully requested.

New claims 29, 30 and 31 have been added to more precisely define the claimed composition. Support for claims 29 and 30 can be found in Applicants' Published Application No. 2004/0265251 A1 in paragraphs [0010] and [0025]. New claim 31 is a combination of claims 1 and 4. No new matter has been added.

Applicants acknowledge the finality of the Restriction Requirement and reserve the right to file a divisional application for the withdrawn claims.

With regard to the Examiner's remarks concerning the references listed in the specification as not being a proper Information Disclosure Statement, Applicants accompany this Amendment with an Information Disclosure Statement listing the prior art patents cited in paragraphs [007] to [009] of Applicants' Published Application.

Claims 1-13 have been rejected under 35 USC § 103(a) as being unpatentable over *Farer et al* (U.S. 6,156,325) in view of *Kane International Disclosure of KFILM™* 2071, 2072 and 2073. This ground of rejection is respectfully traversed.

Before discussing the references in detail, it is believed worthwhile at this point to briefly discuss the novel aspects of Applicants' claimed invention.

Applicants' invention relates to a cosmetic composition, particularly suitable as a nail enamel coating composition which comprises a cellulose-based primary film forming agent in combination with a high molecular weight polyurethane resin having a glass transition temperature of -4° C to about -40° C. See paragraphs [0010] and [0018] of Applicants' Published Application.

It has been unexpectedly found that the combination of a cellulose-based film forming agent with a polyurethane resin having an average molecular weight of about 20,000 to about 80,000 and a glass transition temperature of about -4° C to about -40° C reduces the tendency of a perceptively dry nail enamel coating to transfer onto a rubbed surface. See paragraph [0011] of Applicants' Published Application. It has also been unexpectedly found that the combination of high molecular weight polyurethane

resin with the cellulose-based film forming agent also results in a nail coating film that is strong and flexible. See paragraph [0019] of Applicants' Published Application.

In contrast, U.S. 6,156,325 to Farer relates to a nail enamel composition with improved thixotropic properties obtained with a urea urethane additive (column 1, lines 10-12 and 52-67). Farer's objective is not to improve the transfer resistance and physical properties of a dried nail coating composition but to thicken a liquid nail enamel composition to improve its ability to spread on the nail (column 1, lines 19 to 23).

There is no disclosure whatsoever in Farer of the unexpected results achieved by Applicants' claimed composition in terms of improved transfer resistance of the perceptively dried nail enamel, and the flexibility and durability obtained by using the combination of a cellulose-based film forming agent and the polyurethane resin having the claimed molecular weight and glass transition temperature parameters.

Indeed, the Examiner admits these deficiencies in her position on page 5 of the Office Action wherein it states:

*"Farer does not disclose the high molecular weight and glass transition temperature of the polyurethane in the instant claims."*

Therefore, in considering Farer as a whole, there is no obvious basis contained therein that suggests Applicants' claimed invention in an obvious manner.

The Examiner's combination of Kane International with Farer does not resolve the deficiencies of Farer.

Notably, the Examiner in combining Kane International with Farer has relied upon Applicants' specification as an integral part of the rejection, contrary to the requirements of 35 USC § 103. Thus, the Examiner states in the last two paragraphs on page 5 of the Office Action:

*"Kane International has been marketing the high molecular weight polyurethane resins disclosed in the instant specification, known as KFilm 2071, 2072, and 2073 since 1984 according to the manufacturer who was contacted by the Examiner on July 30, 2009. Applicant has indicated that the resins meet the functional limitations of the instant claims. Applicant has further identified these resins by Trade name in the specification indicating they were commercially available prior to the filling [sic] date of the invention." (emphasis added)*

*"It would have been obvious to one of ordinary skill in the art to have used the KFilm products in the composition of Farer since Kane International*

discloses that they are excellent film forming resins having excellent adhesion and bond strengths.”

It is readily apparent that the Examiner has improperly relied upon Applicants’ specification to provide the motivation for combining the references, and not an incentive provided by the references.

Applicants respectfully submit that Kane International leads away from the claimed invention. More specifically, Kane International states that the benefits provided by its film forming compositions are for use in flexible packaging applications, not for cosmetic applications. Furthermore, the Material Safety Data Sheets for KFILM 2071, 2072 and 2073 (*attached hereto*) each state in item no. 11, “*Toxicological Information*”: that the solvent system used for these materials have toxicological concerns. Accordingly, one of ordinary skill in the art considering the Toxicological Information in Kane International would expect the KFILM 2071, 2072 and 2073 film formers not to be suitable for a cosmetic formulation.

Furthermore, these concerns are underscored in Applicants’ Published Application, which states:

*“Moreover, an often overlooked, but desired, characteristic is the absence of irritation of the skin, hair and nails upon which the film forming cosmetic composition is applied.”*

See paragraph [005] of Applicants’ Published Application.

Therefore, it is respectfully submitted that the Kane International disclosures lead one of ordinary skill in the art away from the claimed invention, and that the combination of Farer with Kane International does not collectively suggest Applicants’ claimed invention in an obvious manner.

In essence, there must be some sound reasoning for combining the references in the manner suggested by the Examiner other than hindsight gleaned from the invention itself. It is improper to use Applicants’ specification as a guide in which to reconstruct the prior art. Panduit Corp. v. Dennison Mfg. Co., 1 USPQ2d 1593 (Fed. Cir. 1987). The criteria for determining obviousness is whether the prior art would have collectively suggested the claimed invention to one of ordinary skill in the art. Both the suggestion and the expectation of success must be found in the prior art, not in the Applicants’ disclosure. In re O’Farrell 7 USPQ2d 1673 (Fed. Cir. 1988).

It is impermissible within the framework of 35 U.S.C. §103 to pick and choose from any one reference only those portions that will support a given position, to the exclusion of the other portions of the reference that are necessary to obtain the full appreciation of what the reference fairly suggests to one of ordinary skill in the art. Bausch & Lomb Inc. v. Barnes-Hind Inc., 230 USPQ 416 (Fed. Cir. 1986).

There must be something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. In re Geiger, 2 USPQ2d 1276 (Fed. Cir. 1987). In order to modify the prior art in order to make a claimed invention obvious, it is necessary for the prior art to suggest the desirability or the obviousness of the modification. There must be some logical reason that justifies the combination of primary and secondary references. In re Laskowski, 10 USPQ2d 1397 (Fed. Cir. 1989).

It is well known in the patent law that a reference cannot be treated as a component of the invention. The test is whether there is something in the prior art as a whole to suggest the obviousness of making the extrapolation. Unless the examiner can find something in the prior art to obviously suggest the extrapolation, the invention is not obvious. CSS International v. Maul Technology, 16 USPQ2d 1657, 1665 (S.D. Ind. 1989). It is improper to use the claimed invention as an instruction on how to reconstruct the prior art. Panduit Corp. v. Denison Mfg. Co., 1 USPQ2d 1593 (Fed. Cir. 1987).

Indeed, without applicants' claims as a guide, it is highly unlikely that one of ordinary skill in the art could fashion the mosaic of teachings from the references in the manner done by the examiner. In essence, the little sense the combination of references makes exists only when viewed in the context of applicants' claimed invention. A rejection on this basis is in error because it relies upon hindsight reconstruction of the claimed invention by using applicants' claims to key the combination. In re Warner, 154 USPQ 173 (CCPA 1967); In re McLaughlin, 170 USPQ 209 (CCPA 1971). Accordingly, reconsideration and withdrawal of this ground of rejection is respectfully requested.

In response to the Requirement for Information stated on page 6 of the Office Action with respect to Polyurethane-8, it should be noted that this term is well-

known to those skilled in the cosmetic art as a shorthand phrase for a copolymer of polyethylene-poly(tetramethylene)glycol, propanoicanhydride, dibutyltindilaurate, isophoronediiisocyanate and isophoronediamine. Polyurethane-8 is the chemical name for this polymer adopted by the Cosmetic, Toiletries, and Fragrance Association ("CTFA") for use on labels of cosmetic products as required by the FDA. Attached is the relevant excerpt from the International Ingredient Dictionary and Handbook, vol. 2, p. 1327, 9<sup>th</sup> Edition (2002) ("INCI") published by the CTFA.

Claims 1-13 have been rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,656,483. It is noted that a timely filed terminal disclaimer can be used to obviate this rejection. Applicants reserve the right to file a terminal disclaimer after all other issues in this application have been resolved.

In view of the above amendments to the claims and remarks, it is respectfully submitted that this application is now in condition for allowance and such favorable action is respectfully requested.

Respectfully submitted,

Dated: November 5, 2009

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## KANE INTERNATIONAL

### MATERIAL SAFETY DATA SHEET KFILM™ 2071

#### 1. Product Information

**24 Hr Emergency Number: 800/424-9300**

Product Name: KFILM 2071

#### 2. Composition / Information on ingredients

Chemical Name:	CAS No.	% Wt.
POLYURETHANE RESIN	REGISTERED	28
ETHYL ACETATE	141-78-6	70
ISOPROPANOL	67-63-0	2

#### 3. Hazards Identification

CONTAINS VOLATILE SOLVENTS  
CLASSIFIED HIGHLY FLAMMABLE

HMIS: Health (1)    Flammability (3)    Reactivity (1)    Personal Protection (G)

#### 4. First Aid Measures

Inhalation: REMOVE TO OPEN AIR. IF BREATHING DIFFICULT, GIVE OXYGEN.  
Skin: WASH WELL WITH COMMERCIAL CLEANER, THEN SOAP AND WATER.  
Eyes: IRRIGATE WITH COPIOUS AMOUNTS OF WATER.  
Ingestion: DO NOT INDUCE VOMITING. SEEK MEDICAL AID.

#### 5. Fire Fighting Measures

Extinguishing Measures

- Suitable: FOAM, CARBON DIOXIDE, DRY POWDER

- Not to be used: WATER JET

Hazardous thermal decomposition and combustion products:

OXIDES OF CARBON AND NITROGEN. HCN GAS ABOVE 330 C<sup>0</sup>

Protective equipment:

WEAR SELF CONTAINED BREATHING APPARATUS

#### 6. Accidental Release Measures

Personal precautions:

AVOID BREATHING FUMES. EXTINGUISH CIGARETTES/OPEN FLAMES.

Environmental precaution:

DO NOT ALLOW TO ENTER DRAINS OR WATER COURSES.

Cleaning procedures:

ABSORB INTO EARTH, SAND OR OTHER INERT MATERIAL AND PUT INTO  
CLOSED CONTAINERS.

**7. Handling and Storage**

Handling: PROVIDE ELECTRICAL EARTH WHEN TRANSFERRING FROM ONE CONTAINER TO ANOTHER. PROHIBIT SMOKING FROM AREA. ENSURE WORKPLACE IS WELL VENTILATED.

Storage: AWAY FROM HEAT AND SOURCES OF IGNITION

**8. Exposure controls / Personal Protection**

\*Occupational Exposure Standards

Chemical Name	LTEL ppm mg/m <sub>3</sub>	STEL ppm mg/m <sub>3</sub>	R-phrases
ETHYL ACETATE	400 1400		R 11
ISOPROPANOL	400 980	500 1225	R 11
	LTEL (long term exposure limits)		
* EH40 / 94	STEL (short term exposure limits)		

Respiratory protection: BREATHING APPARATUS IF WORKPLACE NOT WELL VENTILATED

Hand protection: WEAR GLOVES WHICH ARE IMPERVIOUS TO THIS MATERIAL FOR THE DURATION OF ANTICIPATED EXPOSURE IF THERE IS

POTENTIAL FOR SKIN CONTACT

Eye protection: VISOR OR PROTECTIVE GLASSES

Skin protection: BARRIER CREAM RECOMMENDED

**9. Physical and Chemical Properties**

Appearance:	PALE YELLOW LIQUID	Auto ignition:	*427 <sup>0</sup> C **460 <sup>0</sup> C
Boiling Point:	*77 C **82 C	Explosive Properties:	*2-11% IN AIR **2-12% IN AIR
Flammability:	HIGHLY FLAMMABLE	Flash Point:	- 8 <sup>0</sup> C
Melting Point:	N / A	Odor:	ALCOHOL
Partition Coefficient:	NOT KNOWN	pH:	N / A
Relative Density:	0.92 to 0.93 grms/cc at 20 degrees C	Solubility in water:	INSOLUBLE
Vapor Density:	*3 (AIR=1) **2 (AIR=1)	Vapor Pressure:	*73 mm (20 C) **32 mm (20 C)
Viscosity:	20 - 30 dPas		
Other Data:	* RELATES TO ETHYL ACETATE COMPONENT		

**10. Stability and Reactivity**

Conditions to avoid: SOURCES OF IGNITION

Materials to avoid: STRONG OXIDIZING AGENTS

Hazardous decomposition products: AS DETAILED IN PART 5. IN EVENT OF FIRE

**11. Toxicological Information**

Affects Due To: SOLVENT COMPONENTS

- Inhalation: HEADACHE, DIZZINESS, DROWSINESS



- Skin: IRRITATION, POSSIBLE DERMATITIS WITH FREQUENT CONTACT
- Eyes: IRRITATION, POSSIBLE CORNEA DAMAGE WITH LONG TERM  
EXPOSURE TO FUME
- Ingestion: LOW TOXICITY, MAY CAUSE NAUSEA

## 12. Ecological Information

### Mobility:

VISCOUS LIQUID, WILL SINK BELOW SURFACE OF WATER ONCE SOLVENT HAS EVAPORATED

### Persistence and degradability:

POLYMER CONSIDERED TO BE SLOWLY BIO - DEGRADABLE

### Bioaccumulative potential:

NOT THOUGHT LIKELY TO BE BIO - ACCUMULATIVE

### Aquatic / Ecotoxicity:

RESIN IS NON TOXIC, AQUATIC TOXICITY OF SOLVENTS IS LOW WGK RATING : 1 (BASED ON SOLVENTS)

## 13. Disposal Considerations

### Methods of Disposal:

ABSORB INTO INERT MATERIAL AND PUT INTO DRUMS DISPOSE OF IN ACCORDANCE WITH LOCAL REGULATIONS

### Danger(s):

PRESENCE OF SOLVENTS IN WASTE AND EMPTY DRUMS MEANS THAT CONTAINERS SHOULD BE STILL LABELLED " HIGHLY FLAMMABLE"

## 14. Transport Information

### Special Precautions:

### Classification:

- UN number:	1866	- Packaging Group:	II
- ADR / RID:	3.5 (C)	- ICAO / IATA:	3 (II)
- Marine pollutant:	NOT	- IMDG - code:	3278
- Shipping name:	RESIN SOLUTION FLAMMABLE	- Stow away from foodstuffs:	NO

## 15. Regulatory Information

CAS number: REGISTERED

EEC number: N / A

Labelling: FLAMMABLE LIQUID

Risk Phrase: R 11

Safety Phrase: S7-16-23-29-33

## 16. Other Information

Although data in this MSDS is based on information of this moment and are believed reliable, we cannot assume responsibility for the use thereof, nor do we accept any liability for loss or damage directly or indirectly caused by our product. It is the user's responsibility to check safety, quality and all other properties of this product prior to use, particularly where use is other than as recommended in our Technical Data sheet.

This is to certify that all chemical substances in this shipment comply with all applicable rules under TSCA and that we are not offering a chemical substance for entry in violation of TSCA or any applicable rule there under.

January 2005

# KANE INTERNATIONAL

## MATERIAL SAFETY DATA SHEET KFILM™ 2072

### 1. Product Information

**24 Hour Emergency Number: 800/424-9300**

Product Name: KFILM 2072

### 2. Composition / Information on ingredients

Chemical Name:	CAS No.	EEC No.	% Wt.
POLYURETHANE RESIN	REGISTERED		28
ETHYL ACETATE	141-78-6	200-500-4	63
ETHANOL (IMS – 99.5%)	64-17-5	200-578-6	9

### 3. Hazards Identification

CONTAINS VOLATILE SOLVENTS

CLASSIFIED HIGHLY FLAMMABLE

HMIS: Health (1) Flammability (3) Reactivity (1) Personal Protection (G)

### 4. First Aid Measures

Inhalation: REMOVE TO OPEN AIR. IF BREATHING DIFFICULT, GIVE OXYGEN  
Skin: WASH WELL WITH COMMERCIAL CLEANER, THEN SOAP AND WATER  
Eyes: IRRIGATE WITH COPIOUS AMOUNTS OF WATER  
Ingestion: DO NOT INDUCE VOMITING. SEEK MEDICAL ADVICE

### 5. Fire Fighting Measures

Extinguishing Measures

- Suitable: FOAM, CARBON DIOXIDE, DRY POWDER

- Not to be used: WATER JET

Hazardous thermal decomposition and combustion products:

OXIDES OF CARBON AND NITROGEN. HCN GAS ABOVE 330 C

Protective equipment:

WEAR SELF CONTAINED BREATHING APPARATUS

### 6. Accidental Release Measures

Personal precautions: AVOID BREATHING FUMES. EXTINGUISH CIGARETTES/OPEN FLAMES

Environmental precaution: DO NOT ALLOW TO ENTER DRAINS OR WATER COURSES

Cleaning procedures: ABSORB INTO EARTH, SAND OR OTHER INERT MATERIAL  
AND PUT INTO CLOSED CONTAINERS

### 7. Handling and Storage

Handling: PROVIDE ELECTRICAL EARTH WHEN TRANSFERRING FROM ONE  
CONTAINER TO ANOTHER. PROHIBIT SMOKING FROM AREA. ENSURE  
WORKPLACE IS WELL VENTILATED

Storage: AWAY FROM HEAT AND SOURCES OF IGNITION

Material Safety Data Sheet KFILM 2072

Page 2

## 8. Exposure controls / Personal Protection

\*Occupational Exposure Standards

Chemical Name	LTEL		STEL		R-phrases
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
ETHYL ACETATE	400	140	---	---	R 11
ETHANOL	1000	1900	---	---	R 11
	LTEL (long term exposure limits)				
* EH40 / 94	STEL (short term exposure limits)				

Respiratory protection: BREATHING APPARATUS IF WORKPLACE NOT WELL VENTILATED

Hand protection: WEAR GLOVES WHICH ARE IMPERVIOUS TO THIS MATERIAL  
FOR THE DURATION OF ANTICIPATED EXPOSURE IF THERE  
IS

POTENTIAL FOR SKIN CONTACT

Eye protection: VISOR OR PROTECTIVE GLASSES

Skin protection: BARRIER CREAM RECOMMENDED

## 9. Physical and Chemical Properties

Appearance:	PALE YELLOW LIQUID	Auto ignition:	*427 C **362 C
Boiling Point:	*77 C **78 C	Explosive Properties:	*2-11% IN AIR **3-24 IN AIR
Flammability:	HIGHLY FLAMMABLE	Flash Point:	-8 C
Melting Point:	N / A	Odor:	ALCOHOL
Partition Coefficient:	NOT KNOWN	pH:	N / A
Relative Density:	0.92 to 0.93 grms/cc at 20 degrees C	Solubility in water:	INSOLUBLE
Vapor Density:	*3 (AIR =1) **1.6 (AIR = 1)	Vapor Pressure:	*73 mm (20 C) **45 mm 20 C
Viscosity:	20 - 30 dPAs		
Other Data:	* RELATES TO ETHYL ACETATE COMPONENT		
	** RELATES TO ETHYL ALCOHOL COMPONENT		

## 10. Stability and Reactivity

Conditions to avoid: SOURCES OF IGNITION

Materials to avoid: STRONG OXIDIZING AGENTS

Hazardous decomposition products: AS DETAILED IN PART 5. IN EVENT OF FIRE

## 11. Toxicological Information

Affects Due To: SOLVENT COMPONENTS

- Inhalation: HEADACHE, DIZZINESS, DROWSINESS

- Skin: IRRITATION, POSSIBLE DERMATITIS WITH FREQUENT CONTACT

- Eyes: IRRITATION, POSSIBLE CORNEA DAMAGE WITH LONG TERM EXPOSURE TO FUME
- Ingestion: LOW TOXICITY, MAY CAUSE NAUSEA

## 12. Ecological Information

Mobility:

VISCOUS LIQUID, WILL SINK BELOW SURFACE OF WATER ONCE SOLVENT HAS EVAPORATED

Persistence and degradability:

POLYMER CONSIDERED TO BE SLOWLY BIO - DEGRADABLE

Bioaccumulative potential:

NOT THOUGHT LIKELY TO BE BIO - ACCUMULATIVE

Aquatic / Ecotoxicity:

RESIN IS NON TOXIC, AQUATIC TOXICITY OF SOLVENTS IS LOW WGK RATING : 1  
(BASED ON SOLVENTS)

## 13. Disposal Considerations

Methods of Disposal: ABSORB INTO INERT MATERIAL AND PUT INTO DRUMS  
DISPOSE OF IN ACCORDANCE WITH LOCAL REGULATIONS

Danger(s): PRESENCE OF SOLVENTS IN WASTE AND EMPTY DRUMS  
MEANS THAT CONTAINERS SHOULD BE STILL LABELLED "HIGHLY  
FLAMMABLE"

## 14. Transport Information

Special Precautions:

Classification:

- UN number:	1866	- Packaging Group:	II
- ADR / RID:	3.5 (C)	- ICAO / IATA:	3 (II)
- Marine pollutant:	NOT	- IMDG - code:	3278
- Shipping name:	RESIN SOLUTION FLAMMABLE	- Stow away from foodstuffs:	NO

## 15. Regulatory Information

CAS number: REGISTERED

EEC number: N / A

Labelling: FLAMMABLE LIQUID

Risk Phrase: R 11

Safety Phrase: S7-16-23-29-33

## 16. Other Information

Although data in this MSDS is based on information of this moment and are believed reliable, we cannot assume responsibility for the use thereof, nor do we accept any liability for loss or damage directly or indirectly caused by our product. It is the user's responsibility to check safety, quality and all other properties of this product prior to use, particularly where use is other than as recommended in our Technical Data sheet.

This is to certify that all chemical substances in this shipment comply with all applicable rules under TSCA and that we are not offering a chemical substance for entry in violation of TSCA or any applicable rule there under.

January 2005



# KANE INTERNATIONAL

## MATERIAL SAFETY DATA SHEET KFILM™ 2073

### 1. Product Information

24 Hour Emergency Number: 800/424-9300

Product Name: KFILM 2073

### 2. Composition / Information on ingredients

Chemical Name:	CAS No.	EEC No.	% Wt.
POLYURETHANE RESIN	REGISTERED		28
ETHYL ACETATE	141-78-6	200-500-4	46
ETHANOL (IMS - 99.5%)	64-17-5	200-578-6	26

### 3. Hazards Identification

CONTAINS VOLATILE SOLVENTS

CLASSIFIED HIGHLY FLAMMABLE

HMIS: Health (1)      Flammability (3)      Reactivity (1)      Personal Protection (G)

### 4. First Aid Measures

Inhalation: REMOVE TO OPEN AIR. IF BREATHING DIFFICULT, GIVE OXYGEN

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### 5. Fire Fighting Measures

Extinguishing Measures

- Suitable: FOAM, CARBON DIOXIDE, DRY POWDER

- Not to be used: WATER JET

Hazardous thermal decomposition and combustion products:

OXIDES OF CARBON AND NITROGEN. HCN GAS ABOVE 330 C

Protective equipment:

WEAR SELF CONTAINED BREATHING APPARATUS

### 6. Accidental Release Measures

Personal precautions: AVOID BREATHING FUMES. EXTINGUISH CIGARETTES/OPEN FLAMES

Environmental precaution: DO NOT ALLOW TO ENTER DRAINS OR WATER COURSES

Cleaning procedures:

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### 7. Handling and Storage

Handling:

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PROHIBIT SMOKING FROM AREA. ENSURE WORKPLACE IS WELL VENTILATED

Storage:

AWAY FROM HEAT AND SOURCES OF IGNITION

**8. Exposure controls / Personal Protection**

\*Occupational Exposure Standards

Chemical Name	LTEL		STEL		R-phrases
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	
ETHYL ACETATE	400	140	---	---	R 11
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* EH40 / 94					LTEL (long term exposure limits) STEL (short term exposure limits)

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 Flammability: HIGHLY FLAMMABLE Flash Point: -8 C  
 Melting Point: N / A Odor: ALCOHOL  
 Partition Coefficient: NOT KNOWN pH: N / A  
 Relative Density: 0.92 to 0.93 grms/cc at 20 degrees C Solubility in water: INSOLUBLE  
 Vapor Density: \*3 (AIR = 1) \*\*1.6 (AIR = 1) Vapor Pressure: \*73 mm (20 C) \*\*45 mm (20 C)  
 Viscosity: 20 - 30 dPAs  
 Other Data: \* RELATES TO ETHYL ACETATE COMPONENT  
 \*\* RELATES TO ETHYL ALCOHOL COMPONENT

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 - Eyes: IRRITATION, POSSIBLE CORNEA DAMAGE WITH LONG TERM  
 EXPOSURE TO FUME  
 - Ingestion: LOW TOXICITY, MAY CAUSE NAUSEA

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Danger(s):

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## 14. Transport Information

Special Precautions:

Classification:

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- ADR / RID:	3.5 (C)	- ICAO / IATA:	3 (II)
- Marine pollutant:	NOT	- IMDG - code:	3278
- Shipping name:	RESIN SOLUTION FLAMMABLE	- Stow away from foodstuffs:	NO

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June 2007

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# **International Cosmetic Ingredient Dictionary and Handbook**

**Ninth Edition  
2002**

**Editors**

Renae Canterbury Pepe  
John A. Wenninger  
Gerald N. McEwen, Jr., Ph.D., J.D.

**Volume 2**

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## Polyurethane-6 (Cont.)

**Chemical Class:** Synthetic Polymers

**Functions:** Binder; Film Former; Hair Fixative

## POLYURETHANE-7

**Definition:** Polyurethane-7 is a copolymer of Hexylene Glycol (q.v.), Neopentyl Glycol (q.v.), Adipic Acid (q.v.), isophorone diisocyanate and dimethylol propionic acid monomers.

**Chemical Class:** Synthetic Polymers

**Function:** Film Former

**Trade Name:**

Avalure EX-608 (BF Goodrich)

## POLYURETHANE-8

**Definition:** Polyurethane-8 is a copolymer of polyethylene-poly(tetramethylene) glycol, propanoic anhydride, dibutyl tindilaurate, isophorone diisocyanate, and isophorone diamine.

**Chemical Class:** Synthetic Polymers

**Functions:** Binder; Film Former; Plasticizer

**Trade Name Mixture:**

KFILM 2071 (Kane)

## POLYURETHANE-9

**CAS No.:** 69011-31-0

**Definition:** Polyurethane-9 is the copolymer formed from adipic acid, toluene diisocyanate, propylene glycol, ethylene glycol and hydroxyethyl acrylate monomers.

**Chemical Class:** Synthetic Polymers

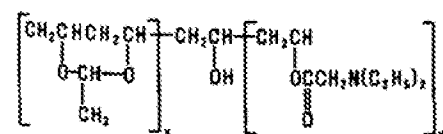
**Function:** Not Reported

**Trade Name:**

Actilane 170 (Wilde Cosmetics)

## POLYVINYLALETAL DIETHYLAMINO-ACETATE

**Definition:** Polyvinylalcohol Diethylaminoacetate is the synthetic polymer that conforms to the formula:



**Information Sources:** JCIC

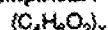
**Chemical Class:** Synthetic Polymers

**Function:** Film Former

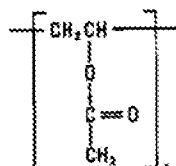
## POLYVINYL ACETATE

**CAS No.:** 9003-20-7

**Empirical Formula:**



**Definition:** Polyvinyl Acetate is the homopolymer of Vinyl Acetate (q.v.) that conforms generally to the formula:



**Information Sources:** 21CFR73.1, 21CFR172.615, 21CFR175.105, 21CFR175.300, 21CFR175.320, 21CFR176.170, 21CFR176.180, 21CFR177.1200, 21CFR177.2800, 21CFR181.22, 21CFR181.30, CIR: [S] JACT-11(4)1992, CIR: [S] JACT-15(2)1996, FCC, JCIC, JCLS, JSQI, TSCA

**Chemical Classes:** Esters; Synthetic Polymers

**Functions:** Binder; Emulsion Stabilizer; Film Former; Hair Fixative

**Reported Product Category:** Mascara

**Technical/Other Names:**

Acetic Acid, Ethenyl Ester, Homopolymer  
Acetylated Polyvinyl Alcohol  
Ethenyl Acetate, Homopolymer  
Polyvinyl Acetate Emulsion  
Polyvinyl Acetate Solution

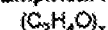
**Trade Names:**

UCAR Latex Resin 130 (Union Carbide)  
Vinac (Air Products)

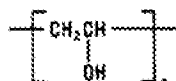
## POLYVINYL ALCOHOL

**CAS No.:** 9002-89-5

**Empirical Formula:**



**Definition:** Polyvinyl Alcohol is the polymer conforming generally to the formula:



It is generally produced by the controlled hydrolysis of Polyvinyl Acetate (q.v.) and normally contains unhydrolyzed acetate groups.

## Polyvinylcaprolactam

**Information Sources:** 21CFR73.1, 21CFR175.105, 21CFR175.300, 21CFR175.320, 21CFR176.170, 21CFR176.180, 21CFR177.1200, 21CFR177.1670, 21CFR177.2280, 21CFR177.2800, 21CFR178.3910, 21CFR181.22, 21CFR181.30, CIR: [S] JT-17(Suppl. 5)1998, CTFA D, DDR, JCLS, JSQI, MAR, ML-12(7745), OTC-IOP, TSCA, USAN, USP XXV

**Chemical Classes:** Alcohols; Synthetic Polymers

**Functions:** Binder; Film Former; Viscosity Increasing Agent - Aqueous

**Reported Product Categories:** Paste Masks (Mud Packs); Mascara; Nail Polish and Enamels; Moisturizing Preparations; Skin Care Preparations, Misc.; Makeup Preparations (Not eye), Misc.

**Technical/Other Name:**

Ethenol, Homopolymer

**Trade Names:**

Airvol 523 (Air Products)  
Airvol 540 (Air Products)  
Elvanol (DuPont de Nemours)

**Trade Name Mixture:**

Vinex 2019 (Air Products)

## POLYVINYL BUTYRAL

**CAS No.:** 63148-65-2

**Definition:** Polyvinyl Butyral is a polymer produced by the condensation of Polyvinyl Alcohol (q.v.) and butyraldehyde.

**Information Sources:** 21CFR175.105, 21CFR175.300, 21CFR176.170, JCIC, JCLS, JSQI, TSCA

**Chemical Class:** Synthetic Polymers

**Functions:** Binder; Film Former; Hair Fixative; Viscosity Increasing Agent - Nonaqueous

**Reported Product Categories:** Manicuring Preparations, Misc.; Basecoats and Undercoats; Nail Polish and Enamels

**Technical/Other Name:**

Vinyl Acetal Polymers, Butyrals

## POLYVINYLCAPROLACTAM

**CAS No.:** 25189-83-7

**Definition:** Polyvinylcaprolactam is a polymer of vinylcaprolactam that conforms generally to the formula:

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